

THE MOUNTAIN PINE BEETLE SITUATION AT DIAMOND LAKE,
UMPQUA NATIONAL FOREST, OREGON

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PORTLAND, OREGON
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FOREST INSECT LABORATORY,
STANFORD UNIVERSITY CALIFORNIA.⁸
Insect Control
Unpgs.

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AT
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OREGON.
AS OF JUNE, 1926.

A. J. Jaenicke,
U. S. Forest Service,
Portland, Oregon.

History of the Infestation

Beginning in 1921, small scattered centers of infestation in lodgepole in the northeastern one-fourth of the Crater Lake National Park and in that portion of the Umpqua National Forest immediately to the north of the Park in the general region of Mt. Bailey, Diamond Lake and Mt. Thielsen, increased rapidly to an epidemic status.

In August, 1923, the Bureau of Entomology made a field study of the situation. At that time it was estimated that the National Park and National Forest areas involved in this lodgepole epidemic covered about 40,000 acres and that at least 75,000 trees were infested (August, 1923). Representatives of the Bureau emphasized the fact that if anything at all was to be done to control this infestation, it would have to be carried on in a comprehensive manner to be effective. At an average cost of \$1.00 per tree, this project would have involved a cooperative expenditure of \$75,000 in the spring of 1924 by the National Park Service and the Forest Service.

The values involved in such a protective program are entirely scenic and recreational in character. The lodgepole on the National Forest lands at this time has a very low timber value. The situation was presented to the Forester for consideration in a report dated December 20, 1923. The Forest Service had no funds for the work. No control work was undertaken on the National Park areas.

Further increases occurred in the infestation in the volume of the 1924 attacks over the 1923 infestation. The 1925 attacks showed a decided decline and there is now evidence to believe that the lodgepole volume which will be attacked in 1926 will be considerably less than the 1925 volume, due perhaps to the abundance of parasitic and predaceous insect enemies of the mountain pine beetle.

In the progress of the infestation since 1921, thousands of lodgepole trees have been killed along the east shore of Diamond Lake. Since this shore line is used by thousands of campers each year, and since in a large part of the camp areas, lodgepole is the only shade tree, the damage, both from a recreational and scenic standpoint has

been considerable. The beetle killings along the southwest shore line have been slight. The northwest shore line has suffered seriously but fortunately is of little recreational value.

The damage in the northeastern portion of the Park has not been of great moment because the more scenic and desirable portions of the Park are farther southward. The lodgepole infestation in 1923 became epidemic in the widely used and scenic parts of the Park south of Crater Lake, and it is here that the National Park Service has spent about \$8,000 in control operations in 1925 and 1926.

Control Operations in 1926 at Diamond Lake

In the fall of 1925, it was evident to me that the epidemic in lodgepole was on the decline and that the infestation was now largely confined to established centers. Apparently inter-migration of the beetles from one area to another was at a minimum in this newly acquired defensive status of the epidemic. This led me to believe that protection of the lodgepole in the more valuable camping areas along the east shore from further inroads by the mountain pine beetle might now be feasible and successful at a low cost. For this work, the Forester allotted the full \$1,000 recommended. In May and June, 1926, all of the infested lodgepoles between Two Bear Creek and Silent Creek on the east and south shores and extending from one-eighth to one-fourth of a mile back from the shore line, were cut and burned. On these four miles of shore line, 723 lodgepoles were cut and burned. These trees represent the 1925 attack. By actual count, the number of lodgepoles attacked and killed in 1924 on the same areas amounted to 1700 trees. This sharp decline is evidence of the present tendencies of the infestation. However, large centers of infestation are still active on the slopes of Mt. Bailey and Mt. Thielsen in the same general locality.

Further Control Operations

If funds are available, it is planned to reclean in 1927 the area covered by the 1926 control operations and to extend the control operations to those portions of the western shore line which have been or will be laid out in summer-home sites. Estimates of the cost of this work cannot be made until the fall of 1926, when the 1926 attacks have been completed.

Control Operations on the National Park

No control work has been done by the National Park Service on those portions of the Crater Lake National Park covered by the Bureau's report of 1923. However, the Park Service has spent a total of about \$8,000 in 1925 and 1926 for such work near the south entrance of Crater Lake.

The Bureau of Entomology plans to carry on considerable experimental work in lodgepole in the Crater Lake National Park this year in an effort to develop methods of preventing attacks by the mountain pine beetle in lodgepoles on areas of high scenic and recreational value. During the past year, District Six has repeatedly emphasized the importance of such research.

General Considerations

Until the fall of 1925, when the epidemic infestation first exhibited marked tendencies toward a heavy decline and a cessation of establishment of new centers of infestation, it was manifestly useless to undertake control measures to protect the trees around Diamond Lake without placing under control the entire infestation of the region. This would have involved the expenditure of probably \$75,000 by the Park Service and the Forest Service, an unjustifiable expenditure considering the uncertainty of success and the benefits to be derived from this enormous outlay.

Whether or not the control operations on the limited areas along the east and south shores of Diamond Lake in May and June, 1926 will be successful cannot be determined until the fall of 1926. Western representatives of the Bureau of Entomology were inclined to doubt the efficacy of such work when confined to limited portions of a large infestation even in its present declining and defensive status. However, the values at stake justified the attempt, especially since the cost of the project was so low.

A more detailed report of the Diamond Lake beetle situation will be submitted in December with the recommendations for control operations for the spring of 1927.

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